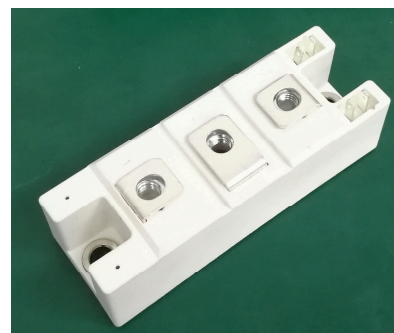


## Thyristor Modules

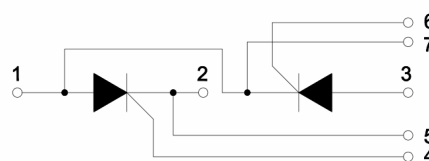
### Features

- Blocking voltage: 1600V
- Heat transfer through aluminum oxide DBC Ceramic isolated metal baseplate
- Industrial standard package
- Thick copper baseplate
- 2500 V<sub>RMS</sub> isolating voltage



### Typical Applications

- Power Converters
- DC motor Control and Drives
- Temperature control
- Lighting control



### Module Type

Type	V <sub>DRM</sub>	V <sub>RSM</sub>
JKT162-16	1600V	1700V

### Maximum Ratings

Parameters	Symbol	Test Conditions	Values	Unit
Average On-State Current	I <sub>TAV</sub>	Sine 180°C; T <sub>C</sub> =85°C	160	A
Surge forward current	I <sub>TSM</sub>	t=10ms T <sub>J</sub> =45°C	5200	A
		t=10ms T <sub>J</sub> =125°C	4800	
Maximum I <sup>2</sup> t for fusing	I <sup>2</sup> t	t=10ms T <sub>J</sub> =45°C	140000	A <sup>2</sup> s
		t=10ms T <sub>J</sub> =125°C	120000	
Isolation Breakdown Voltage(R.M.S)	V <sub>isol</sub>	A <sub>C</sub> 50Hz; R.M.S.; 1min	2500	V
		Ac.50Hz; R.M.S; 1sec	3500	V
Operating Junction Temperature	T <sub>J</sub>		-40~+125	°C
Storage Temperature	T <sub>stg</sub>		-40~+125	°C
Mounting Torque	M <sub>t</sub>	To terminals(M6)	5 ± 15%	Nm
	M <sub>s</sub>	To heatsink(M6)	5 ± 15%	
Maximum non-repetitive rate of rise of turned on current	di/dt	T <sub>J</sub> =25°C from 0.67V <sub>DRM</sub> , I <sub>TM</sub> = π × I <sub>T(AV)</sub> , I <sub>g</sub> =500mA tr<0.5us tp>6us	200	A/us

Maximum critical rate of rise of off-state voltage	dv/dt	$T_J = 125^\circ\text{C}, V_D = 2/3V_{\text{DRM}}$	1000	V/us
Maximum allowable acceleration	a		50	m/s <sup>2</sup>
Module(Approximately)	Weight		165	g

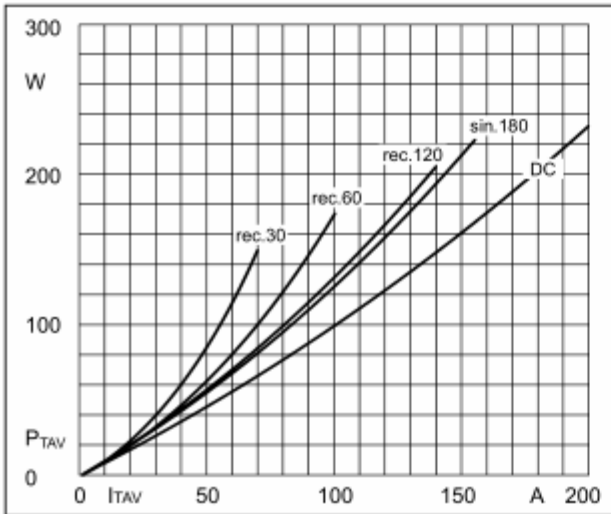
### Electrical Characteristics

Parameters	Symbol	Test Conditions	Values			Unit
			Min.	Typ.	Max.	
Maximum Peak On-State Voltage	$V_{\text{TM}}$	$I_{\text{TM}} = \pi \times I_{\text{T(AV)}}, T_J = 25^\circ\text{C}$			1.60	V
Maximum Repetitive Peak Reverse Current/ Maximum Repetitive Off-state Current	$I_{\text{RRM}}/ I_{\text{DRM}}$	$T_J = 125^\circ\text{C}, V_{\text{RD}} = V_{\text{RRM}}$			20	mA
On state threshold voltage	$V_{\text{TO}}$	For power-loss calculations only $T_J = 125^\circ\text{C}$			0.85	V
Maximum Value of on-state slope resistance	$r_{\text{T}}$	$T_J = 125^\circ\text{C}$			1.5	m $\Omega$
Maximum gate voltage required to trigger	$V_{\text{GT}}$	$T_J = 25^\circ\text{C}, V_D = 6\text{V}$			3.0	V
Maximum gate current required to trigger	$I_{\text{GT}}$	$T_J = 25^\circ\text{C}, V_D = 6\text{V}$			150	mA
Maximum gate voltage that will not trigger	$V_{\text{GD}}$	$T_J = 125^\circ\text{C}, V_D = 2/3V_{\text{DRM}}$			0.25	V
Maximum gate current that will not trigger	$I_{\text{GD}}$	$T_J = 125^\circ\text{C}, V_D = 2/3V_{\text{DRM}}$			6	mA
Maximum Latching current	$I_{\text{L}}$	$T_J = 25^\circ\text{C}, I_{\text{G}} = 1.2I_{\text{GT}}$			500	mA
Maximum Holding current	$I_{\text{H}}$	$T_J = 25^\circ\text{C}, I_{\text{T}} = 1\text{A}$			250	mA
Gate controlled delay time	tgd	$T_J = 25^\circ\text{C}, I_{\text{G}} = 1\text{A}, di_{\text{G}}/dt = 1\text{A/us}$	1			us
Circuit commutated turn-off time	tq	$T_J = 125^\circ\text{C}$	100			us

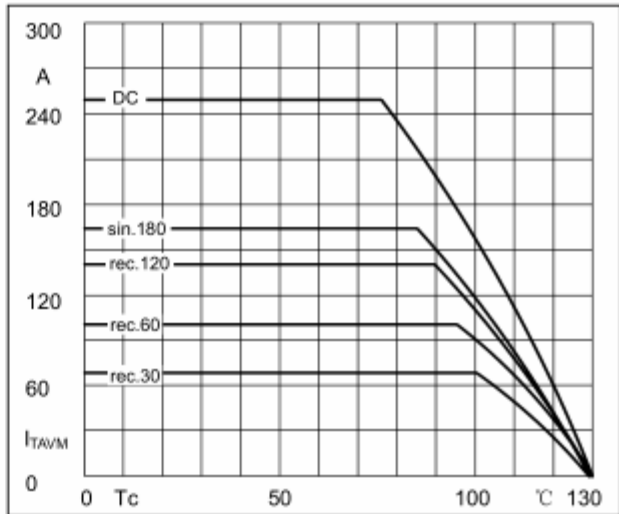
### Thermal Characteristics

Parameters	Symbol	Test Conditions	Values	Unit
Maximum internal thermal resistance, junction to case	$R_{\text{th}(J-C)}$	Per thyristor/ Per module	0.15/0.075	$^\circ\text{C}/\text{W}$
Typical thermal resistance, case to heatsink	$R_{\text{th}(C-S)}$	Per thyristor/ Per module	0.1/0.05	$^\circ\text{C}/\text{W}$

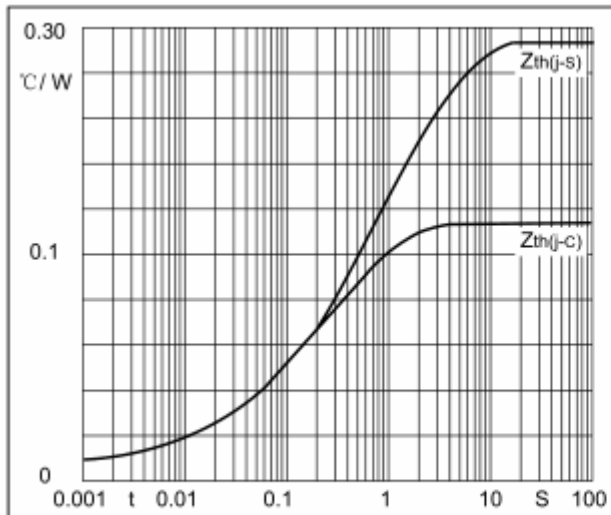
**Performance Curves**



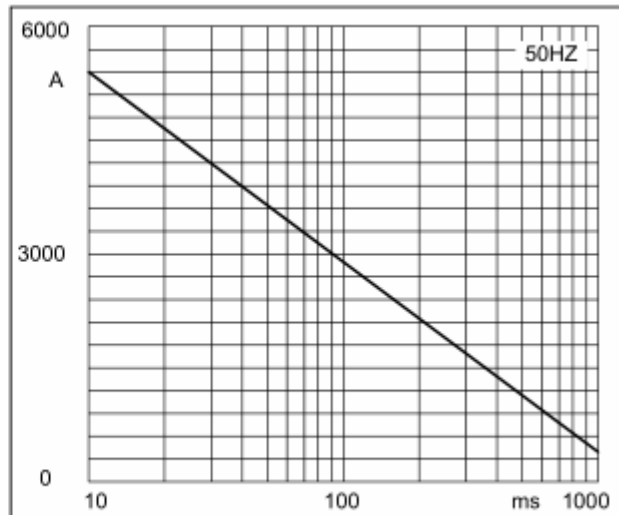
**Fig1. Power dissipation**



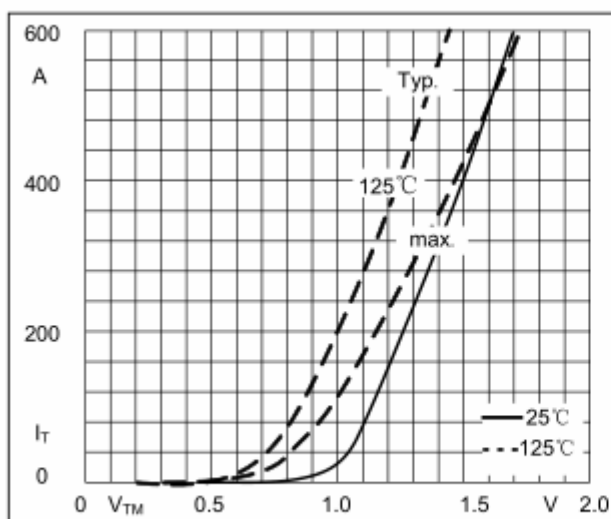
**Fig2. Forward Current Derating Curve**



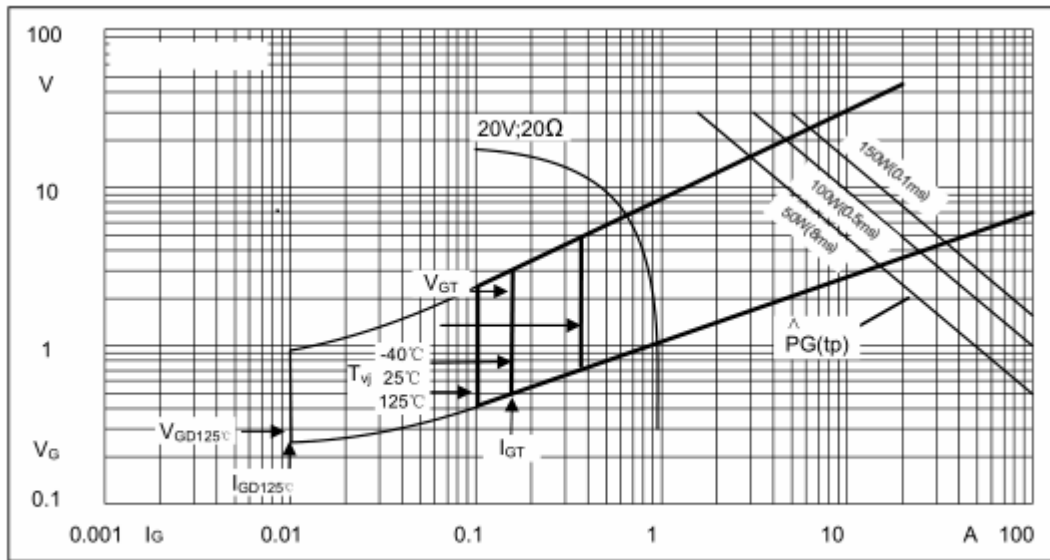
**Fig3. Transient thermal impedance**



**Fig4. Max Non-Repetitive Forward Surge Current**



**Fig5. Forward Characteristics**



**Fig6. Gate trigger Characteristics**

**Ordering Information Tabel**

Device code

<b>J</b>	<b>KT</b>	<b>162</b>	<b>-</b>	<b>16</b>
①	②	③	④	

- ① JBY's power module
- ② Circuit configuration
- ③ Maximum average forward current, A
- ④ Voltage code 1600V

**Package Outline Information**

T2-B dimensions in mm

